

RESPONSE TO PUBLIC COMMENTS
Northampton Wastewater Treatment Plant Permit
National Pollutant Discharge Elimination System (NPDES), Permit No. MA0101818

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) are issuing a final National Pollutant Discharge Elimination System (NPDES) permit for the Northampton Wastewater Treatment Plant in Northampton, Massachusetts. The Final Permit authorizes the City of Northampton to discharge wastewater to the Connecticut River in accordance with the requirements of the Federal Clean Water Act (CWA), 33 U.S.C. §§ 1251 *et. seq.*, and the Massachusetts Clean Waters Act, M.G.L. Ch. 21, §26-53.

The Draft Permit public comment period began April 1, 2008, and ended on April 30, 2008. The following sources submitted comments:

- Connecticut Department of Environmental Protection, Bureau of Water Protection and Land Reuse, Betsey Wingfield, Bureau Chief, April 30, 2008 letter
- Connecticut River Watershed Council, Andrea F. Donlon, River Steward, April 30, 2008 letter
- David Stoff, April 28, 2008 letter
- National Marine Fisheries Service, Patricia A. Kurkul, Regional Administrator, April 28, 2008 letter

The comment letters received by EPA are part of the administrative record. To obtain a copy of these comments and/or the Final Permit, please write or call Doug Corb, EPA Massachusetts Municipal NPDES Permits Program (CMP), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1565.

This document presents EPA's responses to public comments on the Draft Permit, in accordance with the provisions of 40 C.F.R. 124.17. This document also describes any changes in the Final Permit that have been made as a result of those comments. A summary of the changes made in the Final Permit is listed below.

- Influent monitoring for total nitrogen, nitrate/nitrite, Kjeldahl nitrogen has been added to the final permit
- The frequency of ammonia monitoring is increased from monthly to weekly

Betsey Wingfield, Bureau Chief, Bureau of Water Protection and Land Reuse, CT DEP

Comment #1: Our primary concern is that the draft permit does not include a limit for nitrogen loading. Nitrogen limits consistent with the 2000 Total Maximum Daily Load (TMDL) analysis for dissolved oxygen should have been developed by this time¹.

Specifically, in the TMDL (Table 12, p. 45), Action 1a) states, ".1. EPA will coordinate with... a) affected states, in cooperation with the LISS Management Conference, [to] identify loads; enter into agreement to implement load reduction; assess removal costs on a facility basis; establish load reduction targets and schedule to implement point and nonpoint source reduction." This was to be completed by August 2003, but has not been to date.

[Footnote 1: NYS DEC and CT DEP. 2000. A total maximum daily load analysis to achieve water quality standards for dissolved oxygen in Long Island Sound. NYS DEC, Albany, NY and CTDEP, Hartford, CT. 57 p.]

Response: The draft permit does in fact include an effluent nitrogen requirement consistent with the approved TMDL's 25% reduction over the baseline. The following language is in the permit: *The permittee shall implement the recommended operational changes in order to maintain the existing mass discharge loading of total nitrogen. The annual average total nitrogen load from this facility (2004 – 2005) is estimated to be 811 lbs/day.*

*The permittee shall also submit an annual report to EPA and MassDEP, by **February 1 each year**, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year.*

Comment #2: Because the TMDL fully acknowledged the weakness in the baseline load estimates, there is no credible evidence to support the FACT SHEET position that Northampton and other out-of-state facilities have attained a 25% "reduction". This means that permit applicants, such as Northampton, are being asked to maintain a "reduction" that may reflect no real change since adoption of the TMDL, or could even represent an increase in nitrogen load.

Response: The commenter has pointed out due to weakness in the baseline load estimates we cannot be certain that a 25% reduction in actual loading has been achieved. We expect that the weakness will be addressed through the TMDL reassessment process which is currently in progress.

Comment #3: The nitrogen permitting strategy that EPA began implementing in the past few months, while a step in the right direction, does not meet expectations articulated in the Long Island Sound TMDL, and lags far behind the standard for progress we have set in Connecticut. Further, because of the long delay, it presents an incomplete picture to the permit holders who will likely be asked to implement more stringent nitrogen controls in another year when the TMDL is revised. At a minimum, EPA should advise permittees in the FACT SHEET, and in focused outreach efforts, that the TMDL revision is anticipated and it could require significantly stricter nitrogen permit requirements for their facilities.

This should be framed as the next steps beyond EPA's current strategy of maintaining a "cap" on nitrogen loading. Otherwise, the stage is being set for confusion, resistance and additional delays when moving beyond this status quo approach.

Response: It is our intent to do this. We have done this in other permits in the Connecticut River watershed. It was inadvertently left out of the fact sheet. It is now included herein and shall be part of the administrative record for this permit.

The agencies will annually update the estimate of all out-of-basin total nitrogen loads and may incorporate total nitrogen limits in future permit modifications or reissuances as may be necessary to address increases in discharge loads, a revised TMDL, or other new information that may warrant the incorporation of numeric permit limits. There have been significant efforts by the New England Interstate Water Pollution Control Commission (NEIWPCC) work group and others since completion of the 2000 TMDL, which are anticipated to result in revised wasteload allocations for in-basin and out-of-basin facilities. Although not a permit requirement, it is strongly recommended that any facilities planning that might be conducted for this facility should consider alternatives for further enhancing nitrogen reduction.

This permit requires the POTW to be operated to minimize the discharge of total nitrogen to the Connecticut River and monitor for nitrogen species monthly in the influent and in the effluent.

Comment #4: The FACT SHEET makes no reference to the inadequacies of the data analysis and the uncertainty of the purported attainment of the 25% reduction. EPA should avoid statements such as the one that occurs on page 12, "...the overall loading from MA, NH and VT wastewater treatment plants discharging to the Connecticut River watershed has been reduced by about 36 percent" without evidence that a "reduction" has actually occurred. None [evidence] is provided. Again, without a [reliable] baseline load, nitrogen reductions are not only unsubstantiated, but could mislead permit holders into believing that they've met final requirements to protect Long Island Sound without having taken any action to reduce their nitrogen load. That will make the job of implementing new reduction goals under the revised TMDL much more difficult and could forestall real progress towards revised nitrogen targets.

EPA needs to be up front with the applicants on this matter and provide more balance to the discussion in the FACT SHEET. As written now, the applicants are being given tacit approval that they have met their responsibility for nitrogen control provided "...that the aggregate 25% reduction is maintained." (FACT SHEET, p.12).

Response: EPA recognizes there are deficiencies in the baseline calculations. There has, however, been significant reduction in actual nitrogen loads from the Springfield and Holyoke POTWs. As stated previously, EPA agrees that we cannot be certain that a 25% reduction in actual loading has been achieved. This should be resolved as the TMDL is updated. The reassessment now in progress must address the baseline data discrepancies.

Comment #5: We also take issue with the minimal nitrogen monitoring requirements in the draft permit (Part I.A). Weekly sampling of the entire suite of nitrogen species should be required and should include adequate influent and process monitoring if the goal of Part I.F is to be met. Without those data, it will be difficult to evaluate "...alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen" (Draft permit, p13). While a generic evaluation as proposed in the Draft Permit may yield some benefits, the added monitoring will help quantify those evaluations and can also identify current levels of nitrogen removal performance, which would be difficult to estimate without influent monitoring data.

Response: EPA agrees and has added influent monitoring for total nitrogen, nitrate/nitrite, Kjeldahl nitrogen, and to increase the ammonia monitoring frequency to weekly.

Comment #6: Connecticut and New York have invested significant resources in evaluating and managing nitrogen loads from publicly owned treatment works (POTW) and Connecticut currently requires participation in nitrogen management efforts from 79 POTWs located throughout the state, consistent with the TMDL requirements. The mandated reduction schedule has set a final reduction goal of 58.5% from baseline by the year 2014 with steps down in 2004 (23.4% reduction from baseline) and 2009 (43.9% reduction from baseline). Connecticut has elected to use a watershed trading approach to meet its commitment under the TMDL and is currently about two-thirds of the way towards its final nitrogen load target for POTWs on an equivalent load basis. We do support the "aggregate" reduction strategy outlined in the FACT SHEET, which constitutes a de facto form of trading, but we are concerned over EPA's inability to put the out-of-state management program on track, and make it consistent with the efforts put forth in Connecticut and New York.

If, as a region, we are going to resolve the water quality issues in both the Connecticut River and in Long Island Sound, more progressive actions need to be taken at the out-of-state facilities, and the municipal permit holders need to be better advised of the direction nitrogen management is likely to take upon revision of the TMDL.

Response: While we recognize the effort to date by Connecticut and New York it is important to remember that even after achieving the current TMDL, the combined total nitrogen load for New York and Connecticut will far exceed the combined total nitrogen load from Massachusetts, New Hampshire and Vermont. Regardless, we expect the revised TMDL to require greater reductions from all states and we are prepared to incorporate limits consistent with revised TMDL in Massachusetts and New Hampshire permits (EPA has primacy) and have notified Vermont that they have the same responsibility (see the attached letter).

Connecticut River Watershed Council (CRWC)

The Connecticut River, an American Heritage River, is a regional resource that merits the highest level of protection. The Connecticut River, from the confluence with the Deerfield River to the Holyoke dam, is listed as an impaired water body due to priority organics and pathogens.

CRWC is particularly interested in improving water quality in the Connecticut River so that it can support existing primary and secondary contact uses, even during wet weather. Our comments are below.

Comment #1: The protection of existing uses is required under 40 CFR 131.12(a)(1). Below is our understanding of existing uses on the Connecticut River in the vicinity of the outfall.

Less than one mile downstream near the end of the Oxbow, there is a state-owned boat launch that is heavily used for motor boats on any nice weather day (March to December).

Less than one mile downstream of outfall 001 is a state-owned beach on the Connecticut River called Hockanum Beach. This sandy area was formerly known as “tent city” but tenting is no longer allowed there.

Approximately 3 miles downstream of outfall 001 is Brunelle’s Marina, a commercial marina that has boat slips, a private launch, an educational cruise boat, and allows camping on site.

Just upstream of Brunelle’s Marina is the site where Mount Holyoke College is building a boat house and will have a dock for community and college rowing programs. The College currently uses docks at Brunelle’s for launching.

Across the river from Brunelle’s is the Holyoke Canoe Club, a private club with river access.

Because the Holyoke dam is just 7 miles downstream from outfall 001, the discharge is within an impounded section of the river that is heavily used by motor boats.

Response: EPA recognizes that boating and primary contact recreation in and on the water are existing uses for this segment of the Connecticut River. The final permit has new E. coli bacteria limits which EPA has found to be a better indicator of the presence of human disease causing pathogens. The MassDEP has issued a Clean Water Act Section 401 certification that the NPDES permit as written will be protective of all Massachusetts water quality standards for both designated and existing uses.

Comment #2: This section of the river also contains fish and wildlife habitat. Migratory fish such as Atlantic salmon, American shad, sea lamprey, and American eel move upstream using fish passage facilities at the Holyoke dam. Two miles upstream of the outfall location is one of only a few beach sites in the world with federally endangered Puritan tiger beetles. Federally endangered shortnose sturgeon is known to be in this section of the river. Federally endangered dwarf wedge mussel is known to be present in the lower Mill River (Northampton) and the Fort River, both of which are near the outfall.

It is unknown what kinds of mussels are present in the Old Mill River, where outfall 002 discharges, but there is some chance that the dwarf wedge mussel could be present here. In March of 2006, a Rare Mussel Survey Report from 2005 was published by the Holyoke Gas & Electric Department as part of their power generation license under the Federal Energy Regulatory Commission. Survey reaches #22 and 23 were in the vicinity of the Northampton WWTP outfall 001. These surveys found 12 and 14 live yellow lamp mussels, respectively. The yellow lamp mussel is a state endangered species.

Response: The Northampton permit was drafted using information garnered during the recent preparation of the NPDES permits for the West Springfield Station power plant, the Holyoke Gas and Electric Cabot Street Power Station and the Easthampton POTW, as well as other sources. All potential impacts to aquatic life in the receiving water were carefully examined.

There is no river water intake at this facility to cause impingement of adult and juvenile fish or entrainment of fish eggs and larvae. The permit requires that the POTW effluent meet all Massachusetts water quality criteria which are protective of Atlantic salmon, American shad, sea lamprey, and American eels. EPA is aware of the location of the Puritan tiger beetle habitat. The outfalls from the facility will not come in contact with the beetle's terrestrial habitat, and this action does not permit disturbance of this habitat.

Based on information detailing the likely location of dwarf wedge mussel (*Alasmodonta heterodon*), EPA determined that this federally protected species was not expected to be present in the vicinity of the facility's discharge. Therefore, no Section 7 consultation is required under ESA for this species.

EPA recognizes that the federally protected shortnose sturgeon (*Acipenser brevirostrum*) is present in the vicinity of the discharge. EPA initiated an informal Section 7 consultation under the Endangered Species Act with the National Marine Fisheries Service (NMFS) to address any potential impacts to the shortnose sturgeon. In a response letter from NMFS, dated April 28, 2008, the service concurred that this permit action is not likely to adversely affect the shortnose sturgeon and no further consultation was required. Please see the Conclusions Section of the April 28, 2008, Patricia A. Kurkul letter included in this response document for further information.

The surface discharge from the outfalls is not expected to come in direct contact with the river's benthic habitat before becoming highly diluted by the Connecticut River.

Therefore, the yellow lamp mussel (*Lampsilis cariosa*) and its habitat are not likely to be adversely affected by the facility's discharge. There are adequate safeguards in the permit so that if there are any adverse effects, they will be insignificant or discountable to the aquatic species in the Connecticut River.

Comment #3: This is at least the fifth permit in a row issued for a facility on the Connecticut River in which the pH limit is lowered to 6.0 instead of the state standard of 6.5. Page 9 of the Fact Sheet states that the pH of Northampton's influent is low. It states that the City's drinking water is buffered to raise the pH to 7.0-7.5, but the influent is still very low. We think it is worth exploring the source of the low influent.

- If it's not the drinking water, what is it? While we understand the tradeoffs in applying more chemicals to the discharge to raise the pH of the discharge, we think there might be another solution.
- The last pre-treatment audit at the facility seems to have taken place in 1994. What are the industrial users of the wastewater treatment plant?

Response: The last pretreatment audit was done in 2004 not 1994. There were no major deficiencies noted. There are 5 Significant Industrial Users discharging to the POTW, none of which are considered categorical. They are as follows:

Cooley Dickey Hospital
Kollmorgen Corporation - testing of military devices
Minute Maid Company
Packaging Corp
Perstorp Compounds - manufacturer of melamine and urea compounds

Most of these industries have a pH pretreatment system on site. The drinking water pH is currently at 6.5 SU at the tap. EPA was misinformed about drinking water system buffering. The low pH is likely as a result of the drinking water pH in the POTW influent. EPA and MassDEP both agree that rather than adding large quantities of caustic chemicals to the effluent to raise the pH, the lower pH limit of 6.0 found in the draft permit shall be retained.

Comment #4: The proposed maximum daily limit for E. coli bacteria is 409 cfu/100 ml. This limit is not consistent with the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, which states that no single sample shall exceed 235 colonies/100 mL. Moreover, since the river segment is considered impaired because of pathogens, the draft permit limits are not restrictive enough to prevent the Northampton WWTP discharge from contributing to an impairment.

Response: The MassDEP revised its surface water criteria for bacteria in the revisions to the Massachusetts Surface Water Quality Standards (SWQS) 314 CMR 4.00 (December 29, 2006). EPA approved the changes to the bacteria criteria on September 19, 2007.

For fresh waters, the SWQS criteria were revised from fecal coliform bacteria to either enterococci (for bathing beaches) or E. coli. The updated SWQS changes the criteria from the previous standard which was, for Class B waters, a monthly geometric mean for fecal coliform bacteria of 200 cfu/100 ml and no greater than 10% of the samples in a month were to exceed 400 cfu/100 ml. These criteria were based upon qualitative information and best professional judgment (Isaac, 2007).

The new criteria for enterococci are a monthly geometric mean of 33 cfu/100 ml and single sample maximum (SSM) of 61 cfu/100ml. These are designed for bathing beach areas. The new criteria for E. coli (used by MassDEP for non-beach inland waters) are 126 cfu/100 ml geometric mean and a SSM of 235 cfu/100 ml. These criteria are based upon statistical distribution (Isaac, 2007).

The bacteria criteria are based on the EPA criteria originally published in 1986 and more recently included in the EPA bacteria ruling found in the Federal Register (November 16, 2004: "Water Quality Standards for Coastal and Great Lakes Recreation Waters: Final Rule"). The E. coli SSM values are based on 4 classes of exposure with the upper 75% confidence level being the most stringent. MassDEP views the use of the 90% upper confidence level (lightly used full body contact recreation) of 409 cfu/100 ml as appropriate for setting effluent bacteria levels in NPDES permits. MassDEP views this as in keeping with how the fecal coliform criteria were used with the 10% exceedance allowance. EPA explained that if NPDES permits limits are set at the 75% upper confidence level for SSM it would, in fact, be more stringent than intended by the criteria and "could impart a level of protection much more stringent than intended by the 1986 bacteria criteria document." (EPA-823-F-06-013, September 2006, Water Quality Standards for Coastal Recreation Waters: Using Single Sample Maximum Values in State Water Quality Standards).

The bacteria limits for this permit are thus set using the water quality standard based geometric mean value in the SWQS and setting the daily maximum at the 90% upper confidence level. The permit is more stringent in that it does not allow 10% of the effluent samples to be above 409 cfu/100 ml which is how the surface water criteria are applied in the water quality standards.

Comment #5: The Fact Sheet at page 3 and the permit on the bottom of page 2 indicate that there is a secondary outfall (002) that receives occasional discharge when the Connecticut River is at high flow stage and the plant is receiving high wastewater flows. Apparently, outfall 002 receives treated wastewater that is equivalent to discharge water going to 001. We are confused about whether or not 002 really receives treated discharge water. EPA's Enforcement and Compliance History Online (ECHO)² shows significant non-compliant effluent violations at outfall 002 for BOD and TSS, whereas outfall 001 shows no violations. An explanation is warranted. At the very least, there may be a need to flush outfall 002 out with cleaner water in case the lack of flow allows pollutants to somehow accumulate in the pipe. [Footnote 2- See <http://www.epa-echo.gov/cgibin/get1cReport.cgi?too1=echo&IDNumber=MA0101818>.]

Response: Discharges from outfall 002 are surplus treated effluent above the current capacity of the pumps for Outfall 001. The May 23, 2002 permit includes separate limits and monitoring for the two outfalls. Violations were attributed to only one outfall at a time to avoid double counting violations for the same treated effluent discharged through two separate pipes. The current draft permit requires all sampling to be conducted on effluent after the last treatment process, but prior to the Outfall 001/002 pumps, thus eliminating the confusion. In conversations with the treatment plant staff, EPA was informed that the City is working toward increasing the pump capacity for Outfall 001 so all discharges are from that outfall, and Outfall 002 will no longer be used.

Comment #6: If outfall 002 is actually a sanitary sewer overflow (SSO), the permit should be re-written to be consistent with EPA's policies regarding SSOs.

Response: Outfall 002 is not an SSO. It is a relief outfall for fully treated effluent in quantities beyond the current pumping capacity of the Outfall 001 pumps.

- Comment #7: The Fact Sheet on page 3 indicates the City is considering adding additional effluent pump capacity to enable all flows to be discharged through Outfall 001. CRWC supports this modification to the infrastructure. In fact, the final NPDES permit should include a timeline and due date for this switch.
- Response: EPA strongly encourages Northampton's efforts to eliminate all discharges from Outfall 002. A requirement to eliminate all discharges from Outfall 002, if issued by EPA, would most likely be in the form of an enforcement order in response to effluent limit violations, not as a permit condition.
- Comment #8: The discharge limits for the permit were based solely on Connecticut River flow and dilution levels. The draft permit does not take into consideration the discharge to outfall 002 into the former Mill River channel. This river channel has a wetlands area near its confluence with the Connecticut River that is very shallow, contains emergent wetland plants, and is also a site that contains the non-native water chestnut plant. A few years ago, I volunteered with the US Fish and Wildlife Service Conte Refuge to remove invasive water chestnut in this area and in the Oxbow. The water here is very slow moving. Should outfall 002 not be eliminated within the next calendar year, the draft permit should either set specific limits for outfall 002 or should re-calculate all permit limits to be protective of this water body. Late in 2007, Dave Larson of the US Army Corps told me they have approached the City with the idea of doing a feasibility study to redirect a small amount of Mill River flow into this channel. Should the project ever move forward, this water body will no longer be able to fall under the radar screen.
- Response: The receiving waters for discharge 002 are very much on EPA's "radar screen". When permitting Outfall 002, EPA considered that only a small portion of the treated flow from the POTW is discharged through Outfall 002 during what are extreme hydraulic conditions. The POTW flow from 002 enters the Old Mill River at the base of the dike, within feet of the flood control pumps that move storm water over the dike. Exposure of the Old Mill River (on the POTW side of the dike) to treated effluent is limited to a few feet around the pump intake. As the water is pumped over the dike, the effluent is mixed with storm water. Once over the dike it is further mixed with flow backing up to the dike from the flooding Connecticut River.

Because outfall 002 is used only during extreme hydraulic conditions where the Old Mill River will receive flood water, the dilution of the 002 effluent will be great. The one parameter of concern is total residual chlorine as this is a dilution based limit. The treated effluent from 002 is mixed with storm water as it is pumped over the dike. The storm water is high in organic matter which will neutralize any surplus chlorine. The permit conditions should be protective of the most sensitive species in the receiving waters.

Comment #9: The Fact Sheet on page 13 says, “I/I (infiltration and inflow) in the collection system is significant in the spring causing plant flows to almost double. Northampton has an ongoing I/I removal program. Williamsburg will need to similarly address I/I in the collection system.” It would be good if the Fact Sheet provided information about what has been accomplished under the current I/I plan. Part I.C.3 of the draft permit requires the permittee (Northampton) and the co-permittee (Williamsburg) to each develop and implement a plan to control I/I. CRWC supports this program, and would like to see goals with timelines. In April 2007 during a large storm, the sewer line from Williamsburg burst and spilled out into the woods. An unknown quantity of raw sewerage mixed with rain water was released, according to a representative I spoke with in May 2007 from the engineering department at Northampton DPW. The line had gotten clogged with rags and the problem was exaggerated because of I/I.

Response: This permit adds Williamsburg as a co-permittee specifically to address I/I and collection system maintenance for that town’s contribution to the Northampton POTW.

Comment #10: This facility is discharging 810 lbs/day of nitrogen. The Northampton WWTP is the third largest nitrogen contributor in the Massachusetts part of the Connecticut River basin but is the fourth largest wastewater treatment plant. This is one of the big contributors of nitrogen in the basin, and therefore is contributing to the “dead zone” in Long Island Sound. Chicopee, Northampton, Holyoke, South Hadley, Westfield, and Amherst should all be required to implement nitrogen and phosphorus reduction goals as soon as possible. We are glad that Massachusetts facilities are starting to need to plan for this change, but we believe all of these facilities should have extra requirements sooner.

Response: See the response to the CT DEP comments, in particular, see response 5.

Comment #11: We do not agree that requiring quarterly phosphorus sampling is too burdensome to continue. As facilities implement nutrient reduction plans and as Massachusetts hopefully adopts specific water quality standards for nutrients in the future, having a continuous set of data for each of the major WWTPs in the watershed will be very important. Moreover, the facility discharges into a dammed portion of the Connecticut River and also a very shallow and slow moving former Mill River channel. We ask EPA to re-instate quarterly total phosphorus sampling.

Response: Phosphorus sampling data from March of 2006 through June of 2008 for the Northampton POTW demonstrate a total phosphorus range 0.12 mg/l to 7.6 mg/l, with an average total phosphorus discharge of 3.0 mg/l. This is entirely in line with what EPA expects to see from a secondary treatment plant of this type without additional phosphorus removal apparatus. The Final Massachusetts Year 2006 Integrated List of Waters does not list phosphorus as an impairment to this segment of the river. It is listed for only priority organics and pathogens. The next river segment MA34-05 which runs 15.4 miles from the Holyoke Dam is also not listed for nutrients. EPA stands by its decision that the effluent has been adequately characterized for phosphorus and will not require quarterly total phosphorus monitoring.

Comment #12: We note that this facility occasionally exceeds its daily BOD concentration limits (January 2006 and April 2004, for example). Have the sources of this issue been identified and resolved?

Response: The compliance record for this facility is under compliance review by EPA Region I staff. The Regional Compliance staff has been made aware of this concern.

David Stoff

Comment #1: Part I Effluent Limitations and Monitoring Requirements

The Fact Sheet notes that section 301(b)(1)(C) of the Clean Water Act requires achievement of, “any more stringent limitation, including those necessary to meet water quality standards...established pursuant to any State law or regulation.” Because the effluent limit for bacteria relies so heavily on dilution of the discharge to meet the state water quality standard the limits in the Draft Permit are difficult to enforce.

The Draft Permit provides a maximum daily concentration for Escherichia coli (E. coli) bacteria of 409 cfu/100 ml sample with a twice a week monitoring requirement. Massachusetts water quality standards provide a limit of 126 cfu/100 ml sample for a Class B water such as the Connecticut River. I must confess that the Fact Sheet's explanation of the bacteria limitation in leaves me puzzled:

The effluent limits for Outfall # 001 are 126 cfu/100 ml geometric monthly mean and 409 cfu/100 ml maximum daily value (this is the 90% distribution of the geometric mean of 126 cfu/100 ml). These limits are seasonal from April 1 to October 31.

Response: Please see the response to Comment 4 from the Connecticut River Watershed Council

Comment #2: A narrative description of how seasonal limits figure into the permit's monitoring requirements and effluent limitation would be appreciated. 314 CMR 4.05 provides for a single sample E. coli limit of 235 CFU/100ml, and a geometric mean, and effluent limitation would be appreciated. 314 CMR 4.05 provides for a single sample E. coli limit of 235 CFU/100ml, and a geometric mean, based on five samples, of 126 CFU/100ml. If the seasonal limit goes into effect on April 1, and the monitoring frequency is twice a week, five samples would be available two and a half weeks into April. These samples could all test at the high end of the single sample limit, and still be well under the permit's daily limit of 409 CFU/100ml. Because the 126 cfu/100ml limitation is based on multiple samples and the effluent is not sampled on a daily basis the Draft Permit could allow the Northampton WWTP to violate the state water quality standard for two and a half weeks without causing a violation of the permit's 409 CFU/100ml maximum daily limitation.

Perhaps the sampling regime could be augmented so that more samples are taken during the first week of the seasonal limit to avoid the scenario described above; something like five samples in five days for the first week.

Response: The seasonal limits for bacteria and disinfection are to protect the receiving water use of primary contact recreation. Please see the answer to Comment 3 for a more complete explanation of the seasonal limits. The month of April is the start-up period where the POTW achieves a balance between total residual chlorine (TRC) and bacteria limits. The disinfection system is optimized to leave sufficient chlorine residual to kill the bacteria while insuring the TRC will not be toxic to receiving water organisms after initial dilution. The low temperature of the receiving water in April precludes most contact recreation and the month is viewed as an adjustment period for disinfection.

The proper disinfection balance should be achieved by the time required sampling results are reported to EPA and MassDEP

Comment #3: On a more theoretical level, The Fact Sheet contains no explanation as to why seasonal limits are appropriate at all. The river uses supported by the state water quality standard, such as boating, fishing (or fish consumption), are not based solely on seasonal use. The cumulative effects of “out of season” discharges of pollutants (e.g. bacteria and chlorine) exceeding criteria in state water quality standards has the reasonable potential to degrade the river because Total Maximum Daily Load limits for bacteria and effective non-point source controls have not been implemented, and the maximum daily concentration for bacteria, when it is limited by the permit, exceeds the numerical criteria for a class B water.

Response: The seasonal limits are only for bacteria and total residual chlorine. The response to Comment 4 from the Connecticut River watershed Council above explains why seasonal limits for these two parameters are beneficial.

Comment #4: An explanation of how the designation of a “seasonal” warm water fishery becomes an acceptable basis for suspending criteria that protect other existing uses is warranted. This reach of the Connecticut River is listed as impaired by pathogens and priority organics, and nothing in 314 CMR 4.0 suggests that numerical criteria for these pollutants are suspended between November 1 and March 31; rather, the opposite is true. The presumption exists, based on the category five listing, that pathogens impair the river in the vicinity of the Northampton WWTP, and the permittee should be required to demonstrate that the discharge will not violate numerical criteria for bacteria so as to comply with sections 301 and 402 of the Clean Water Act.

Response: The designation of “warm water fishery” has nothing to do with the seasonal disinfection requirements and seasonal bacteria limits in the permit. The Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Water, February 23, 1990, explains that: *Disinfection shall provide adequate protection for public health. Disinfection of effluents containing pathogenic organisms shall be required: 1) year-round in segments designated for public water supply or shellfishing 2) seasonally (April 1 through October 15) in segments designated for primary contact recreation; 3) as necessary in other waters where the Division determines there is a public health need.* The MassDEP has determined that seasonal disinfection is appropriate for the Northampton discharge.

The bacteria limits protect primary contact recreation which is a warm weather activity (April through October) EPA and MassDEP extend the bacteria limits and disinfection season through the end of October to be consistent with monthly discharge monitoring report requirements.

Seasonal limits recognize that it is necessary to disinfect the effluent during periods when human exposure is greatest (during summer recreation). This is balanced with the wish to reduce the use of chlorine wherever possible as chlorine and chlorination byproducts may be highly toxic to aquatic life if inadvertently used in excess.

The listing of “priority organics” as an impairment to the Connecticut River is based on the presence of polychlorinated biphenyls (PCBs) found in fish tissues. Priority pollutant analysis reported with the permit reapplication does not indicate that the Northampton discharge is a contributor of PCBs or is a source of the impairment. If permit limits were required for PCBs, they would not be seasonal.

Comment #5: I/I Removal Plans

The Draft Permit includes requirements for the permittees to control infiltration and inflow (I/I). The Fact Sheet explains the legal basis of these requirements as the “duty to mitigate” stated in 40 CFR 122.41(d) and standard conditions for “Proper Operation and Maintenance” found at 40 CFR 122.41(e). These requirements are applicable to Williamsburg because its sewer system discharges into the Northampton WWTP.

The Draft Permit recognizes that Sanitary Sewer Overflows (SSOs) are unauthorized point source discharges (Part I (B)), but fails to define the applicable treatment level for these discharges. One could infer that immediate elimination is required, but this is not stated. The I/I plan requirement at Part I (C)(3) of the Draft Permit essentially allows “self-scoping” by the permittees, and I find this troubling. A NPDES permit should require immediate compliance with CWA’s technology standards, or at least a schedule to achieve that compliance. CWA 301; 40 CFR §122.47. There is no indication that the I/I plans produced pursuant to the Draft Permit would meet any of the technology standards applicable under the Clean Water Act, much less achieve immediate compliance with them.

It is arguable that sections 301(b)(1)(A) and 301(b)(1)(C) of the Clean Water Act provide the appropriate technology standard for I/I removal plans if eliminating the water quality impacts of a point source -SSOs- is the primary goal of the plan.

If this is the case, the permit ought to specify a technology standard for SSO removal and distinguish the standard for SSO removal from one based on operational requirements of WWTPs.

For example, a permittee could argue that the Practicable Waste Treatment Technology (“BPWTT”) standard defined at 40 CFR 35.2005 is relevant to operation of the sewer system pursuant to the grant provisions of Title II of the Clean Water Act. Elimination of “excessive” I/I¹ is discussed in the supporting regulations; however these regulations are based maximizing the use of federal funds, not point source elimination.

In the analogous case of combined sewer overflows, courts concluded that wet weather discharge points were not an element of the “treatment works” as that term is defined in the granting provisions of Title II, and therefore technology standards/effluent limits for point sources were applicable to controlling the discharge. See, *Montgomery Environmental Coalition v. Costle*, 646 F.2d 568, 590 (C.A.D.C., 1980). The inference is that a stringent technology standard, such as limitations necessary to achieve water quality standards (CWA 301(b)(1)(C)) should be applied to I/I removal where SSOs are a problem.

[Footnote 1-Excessive infiltration/inflow. The quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow. (See secs. 35.2005(b) (28) and (29) and 35.2120.)]

Response: The permit does not include effluent limitations for sanitary sewer overflows (SSOs) because it does not authorize discharges from SSOs. Such discharges are unpermitted discharges subject to appropriate enforcement response consistent with the Clean Water Act.

Comment #6: On a more practical level, the permit should deal with the expense of I/I removal in a more direct and transparent way. Scarce municipal resources should be preserved for priority I/I removal projects. To preserve municipal resources the permit should require the adoption modification of sewer use ordinances to require a time of transfer inspection of private sewer lines. This would properly shift the burden of removing roof drains and sump pumps to property owners.

The New England Interstate Water Pollution Control Commission manual Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems provides an example of a time of transfer ordinance.²

[Footnote 2- Prior to the original connection, reconnection or transfer of water and/or sewer service to a tenant or property owner, the city may inspect or require the inspection of private sanitary sewer service lines thereon for the purpose of determining the amount of infiltration and inflow into such lines, if any. Inspections shall be made or required when, based upon local infiltration and inflow conditions and experience, the director of public works has determined that such inspections are necessary to effectuate the purposes of this subdivision. Any conditions discovered in such line inspections causing or allowing infiltration or inflow shall be repaired by the property owner or tenant, or agent thereof, prior to such original connection, reconnection or transfer of city water and/or sewer service, as applicable. Where conditions have been discovered on existing private service lines but for which no application for reconnection or transfer to city service has been sought, the property owner or tenant shall cause such repairs and maintenance to be performed in accordance with sections 78-150 and 78-151. (Friendswood, Tex., Code of Ordinances pt. II, ch. 78, art. III, div. 3, subdiv. II, § 78-148 (1992))]

Response: We do not concur that the I/I control requirements in Part C. of the permit would result in a misallocation of municipal resources. The requirements specify measures that must be components of the I/I control program, but specifically leaves it to the permittee to determine the capital programs which will best achieve the program goals. If the permittee wishes to establish local ordinances regarding removal of private inflow as a condition of property sales as a component of its inflow control program, it is free to do so. EPA does not believe that it should mandate such a program in the permit.

The Northampton Sewer Ordinance allows for inspection of private sewer connections by the City. The City shall have “ready access at all reasonable times to all pertinent parts of the premises for the purpose of inspection...” This is not limited to a time of transfer inspection, but will surely allow one. The Northampton Sewer Ordinance also establishes the homeowner’s responsibility for the cost of complying with the ordinance.

Comment #5: Outfall 002

A review of data returned by EPA's Enforcement & Compliance History Online ("ECHO")³ database shows that discharges from this outfall routinely fail to meet requirements for secondary treatment. The ECHO data indicates that, for example, during the month of October 2005, discharges at outfall 002 violated the fecal coliform standard, among others. Because of this, I am skeptical about the information provided about this outfall, particularly the chart found on page 8 of the act Sheet where this period of time is blanked out.

[Footnote 3-http://www.epa-echo.gov/echo/compliance_report_water_icp.html]

Response: The chart to which you refer is reproduced below. The column labeled: "Total Number/Year", lists 8 discharges for Outfall 002 for the year 2005. Because all 8 discharges did not occur in one month and 8 is a yearly total, the column was blacked out for the subsequent months. The table could have been clearer. The 8 Outfall 002 discharges for calendar year 2005 occurred on April 3 and 4, October 8, 9, 10, 15, 16, and 26.

Discharges to Outfall 002 by Year		
Year	Total Number/Year	Discharge Dates
2007	3	April 16, 17, and 18
2006	1	January 19
2005	8	April 3 and 4
2005		October 8, 9, and 10
2005		October 15, and 16
2005		October 26

Comment #5: If the wet weather performance of the system is a substantial problem, it would be appropriate for a more individualized I/I plan to be included in the permit

Response: The final permit requires: *An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.*

It also requires: *An educational public outreach program for all aspects of I/I control, particularly private inflow.*

The individual I/I plan developed by the permittee (based on the permit requirements) shall be reviewed by EPA's Water Technical Unit. If the I/I plan is found to be inadequate to address permit violations caused by excessive I/I flows, then it may be addressed by an appropriate enforcement response consistent with the Clean Water Act.

Comment #6: Outfall 002 is described as a high water discharge point in the Fact Sheet, yet the ECHO data indicates that it is a bypass or SSO.

Response: Outfall 002 is neither a bypass nor a SSO. 40 CFR, §122.41(m) states that a "Bypass means the intentional diversion of waste streams from any portion of a treatment facility." Outfall 002 receives full treatment and does not bypass any portion of the treatment facility. Outfall 002 does not meet the definition of a sanitary sewer overflow either, as a SSO is a discharge of raw sewage from municipal separate sanitary sewer systems. The listing in ECHO is incorrect.

Comment #7: The Fact Sheet states "I/I in the collection system is significant in the spring causing plant flows to almost double." Because the Clean Water Act requires NPDES permits to contain appropriate technology standards, an I/I plan that fails to define the standard for a significant and repetitive discharge cannot be said to be in compliance with the Act's requirements.

Response: The Clean Water Act requires technology standards for pollutants. Flow in and of itself is not a pollutant and thus does not require a technology standard. Where a causal link may be made between I/I and violations of the permitted effluent limits, EPA may take an enforcement response consistent with the Clean Water Act.

Patricia A. Kurkul, Regional Administrator, National Marine Fisheries Service

Conclusions

Based on the above analysis of water quality effects and the determination that all effects, if adverse, will be insignificant or discountable, NMFS is able to concur with EPA's determination that the proposed reissuance of the NPDES permit for this facility is not likely to adversely affect shortnose sturgeon. Therefore, no further consultation pursuant to Section 7 of the ESA is required.

As you know, NMFS, USFWS, and EPA are currently engaged in Section 7 consultations on EPA's water quality standards and aquatic life criteria. Those consultations may reveal effects of EPA's program that NMFS did not consider in this evaluation or they may change national water quality criteria and standards in ways that affect the water quality program for the State of Massachusetts.

Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action.

NMFS expects that EPA will alert NMFS anytime there is a water quality based permit violation resulting from the operation of this facility.